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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/755,042 | 01/09/2004 | Mou-Shiung Lin | JCLA8533-D2 | 8665 |
| 23900 | 7590 | 04/20/2005 | EXAMINER | |
| J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE, CA 92618 | | | FENTY, JESSE A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/755,042 | LIN ET AL. |
| | Examiner | Art Unit |
| | Jesse A. Fenty | 2815 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 February 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 30-40, 43-48, 52, 54-60 and 141-162 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 30-40, 43-48, 52, 54-60, 141-162 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 30-40, 43-48, 52, 54-60 and 141-162 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. In re claims 30, 38 and 141, the limitation, “at least a die having a first active device and a second active device” is vague and indefinite in connection with applicant’s disclosure. Specifically, the difference between the “die” and the “first active device” and “second active device” is unclear. Examiner interprets the “die” and the “active device” to be one in the same. However, the claim language appears to represent contrary. Further, claim 38 goes on to claim a “plurality of said dies,” which appears to be more in conformance with the specification.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

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subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 30-40, 43-48, 52, 54-59 and 141-161 are rejected under 35 U.S.C. 102(e) as being anticipated by Miura et al. (U.S. Patent No. 5,565,706).

In re claims 30, 33, 34 and 141, Miura (esp. Fig. 6) discloses a semiconductor device, comprising:

at least a die having a first active device and a second active device; and
a metal layer¹ deposited over said die and extending to a place under which there is no die, wherein a signal is suited for being transmitted from said first active device to said second active device.

The structure further comprises a dielectric layer over said die and electrically connected via a via (claim 34).

In re claims 31, 32, 142 and 143, Miura discloses the devices of claims 30 and 141, respectively. The limitation, "wherein multiple ... functions" are recitations of the intended use of the claimed device. Terms that simply set forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

In re claims 34 and 144, Miura discloses the devices of claims 30 and 141 respectively, further comprising a dielectric layer over said die, said metal layer deposited on said dielectric layer and electrically connected to said die through at least a via in said dielectric layer.

In re claims 35 and 145, Miura discloses the devices of claims 30 and 141 respectively, wherein said die has at least a thin-film circuit (contact lands atop dielectric layers.)

¹ The metal layer can be chosen from several of the metal layers that are stacked above the chips.

In re claims 36 and 146, Miura discloses the devices of claims 30 and 141 respectively, wherein said metal layer comprises a power bus (connected to power terminal 29).

In re claims 37 and 147, Miura discloses the devices of claims 30 and 141 respectively, further comprising a dielectric layer on said metal layer.

In re claims 38 and 148, Miura discloses the devices of claims 30 and 141 respectively, further comprising a plurality of said dies, said metal layer electrically connecting said dies.

In re claims 39 and 149, Miura discloses the devices of claims 30 and 141 respectively, further comprising a film layer around said die, and said metal layer further extending over said film layer.

In re claim 40, Miura discloses the device of claim 30, further comprising a substrate under said die and under said film layer.

In re claims 43 and 153, Miura discloses the devices of claims 30 and 141 respectively, wherein said substrate comprises metal.

In re claims 44, 52 and 154, Miura discloses the devices of claims 40, 48 and 141 respectively, wherein said substrate comprises silicon.

In re claims 45 and 150, Miura discloses the devices of claims 30 and 149 respectively, wherein a material of the dielectric layer is polyimide (column 1, lines 59-60., column 10, lines 25-30).

In re claims 46 and 151, Miura discloses the devices of claims 39 and 149 respectively, wherein said film layer comprises silicon.

In re claims 47 and 152, Miura discloses the devices of claims 39 and 149 respectively, wherein said film layer has a surface coplanar with an active surface of said die.

In re claims 48 and 155, Miura discloses the devices of claims 30 and 141 respectively, further comprising a substrate, wherein said substrate has at least a cavity accommodating said die.

In re claim 54, Miura discloses the device of claim 30, wherein said die has an active surface, said metal layer deposited over said active surface of said die.

In re claims 55-57 and 159, Miura discloses the devices of claims 30 and 141 respectively, further comprising a passive device in a non-die region. The passive device, for example, a capacitor is formed everywhere in which two metal layers are separated by a dielectric layer.

In re claims 58, 59, 160 and 161, Miura discloses the devices of claims 30 and 141 respectively, further comprising a bump made of solder and gold.

In re claim 156, Miura discloses the device of claim 141, wherein said die has an active surface and a backside, said backside of said die joined with said substrate, and said metal layer deposited over said active surface of said die.

In re claim 157, Miura discloses the device of claim 141, further comprising a passive device deposited at a place which there is no die.

In re claim 158, Miura discloses the device of claim 141, further comprising a passive device over said die.

3. Claims 30, 60, 141 and 162 are rejected under 35 U.S.C. 102(e) as being anticipated by Vu (US 2002/0158334 A1).

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In re claim 30 and 141, Miura (esp. Figs. 9 and 10) discloses a semiconductor device, comprising:

at least a die having a first active device and a second active device; and
a metal layer deposited over said die and extending to a place under which there is no die,
wherein a signal is suited for being transmitted from said first active device to said second active
device.

In re claims 60 and 142, Vu discloses the device of claim 30, wherein the structure
comprises only one die.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

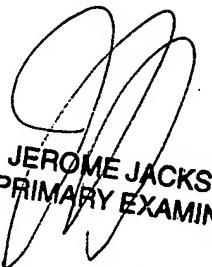
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A. Fenty whose telephone number is 571-272-1729. The examiner can normally be reached on 5/4-9 1st Fri. Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jesse A. Fenty
Examiner
Art Unit 2815



JEROME JACKSON
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "JJ". Below the signature, the name "JEROME JACKSON" is printed in capital letters, followed by "PRIMARY EXAMINER" in a slightly smaller font.